IN THE SPECIFICATION

Amended Paragraphs:

Paragraph begins on page 2, line 13:

Figure 1A shows a typical computer network system 10. In this example, the system 10 includes servers 14, 16, and 18 connected with a network 12. In a typical network, the network 12 is an Ethernet network which utilizes a file based data transfer protocol. The servers 14, 16, and 18 include network interface cards (NIC) 32, 34, and 36 which are connected with NICs 26, 28, and 30 of the network 12. The network 12 is also connected with a hub [[16]] 46 which itself is connected with terminals 20, 22, and 24. In one example, when multiple servers such as the servers 14, 16, and 18 are operating on the network 12, all of the servers 14, 16, and 18 boot and utilize an operating system. Consequently, all of the servers 14, 16, and 18 must be able to run boot up operations of some kind of operating system such as, for example, Windows 2000. Therefore, the servers 14, 16, and 18 may, in one example, have storage devices such as disk drives that may store the operating system for use by a particular server. In a redundant array of inexpensive disks (RAID) configuration, the operating system for each of the servers 14, 16, 18 would need at least two storage devices included within the server in this type of implementation. Therefore, as more servers are connected with the network 12, more resources are required to run an operating system on all of the servers. For example, if 60 servers were connected to the network 12, then at least 120 disk drives may be necessary if RAID is run on all of the servers. Therefore, extensive amounts of resources might be used that may be extremely costly for a user.

Paragraph begins on page 3, line 7:

Figure 1B shows an example a network system 40 which utilizes preboot execution environment (PXE) which is an Ethernet based system which allows servers to

boot from storage devices on a network. Because PXE is utilized, the data transfer protocol utilized is a filed based transfer. Therefore, files needed for boot up operations may be transferred from a storage device to the server being utilized for boot up. The system 40, in this example, includes servers 14, 16, and 18 connected to the network 12 which in turn is connected to bootable drives 32, 34, 36.. In such as example, each of the servers 14, 16, and 18 typically boots up using operating system data received from the bootable drives 32. Unfortunately, the system 40 can only utilize file based data transfer and does not have the flexibility to utilize other data transfer protocols. Therefore, if data storage systems which does not use file based data transfer such as, for example, internet SCSI (iSCSI) ~~is utilized~~, there is no defined protocol to enable boot up of those servers using data stored on storage devices on the network.

Paragraph begins on page 4, line 17:

In another embodiment, a method to install an operating system on a ~~server~~ target storage device is provided. The method includes initiating setup to install the operating system and receiving an IP address of a subsystem where the operating system is to be stored. The method also includes determining a number of storage devices located in the subsystem and receiving identification of [[a]] the target storage device selected from the number of storage devices located in the subsystem. The method further includes installing the operating system in the target storage device using block data transfer.

Paragraph begins on page 10, line 7:

The first time the server [[104]] 106 which uses the methods described herein attempts to boot up, there is no operating system installed on any of the subsystems 128, 130, and 134. Therefore, an installation process is conducted so when boot up occurs after installation of the operating system, the server [[104]] 106 may know which disk contains the operating system data for boot up and therefore may boot up from a storage device over the network 102.

Paragraph begins on page 10, line 12:

In an initial boot up process before installation has occurred, the system BIOS 122 communicates with the iSCSI card 104 to determine the configuration of storage devices connected to the server. In this embodiment, the iSCSI IOP 110 runs an iSCSI protocol which uses block based data transfer using internet protocol packets. Therefore, the iSCSI IOP 110 utilizes a kernel to determine the storage devices available to the server 106. The kernel is a code that is stored in the option ROM BIOS 112 and ~~retrieved~~ retrieves into the memory 114 to be utilized by the iSCSI IOP 110. If setup is not requested by the user, the kernel returns data stating that very large numbers of disk drives are connected onto the network but does not know or detect which drives have an operating system.

Paragraph begins on page 12, line 3:

After the first phase of installation is done, the system is rebooted. Windows 2000 now knows that the boot up data is located within disk-4 144 within the subsystem 134 at IP address 3.4.5.1. The installation continues until Windows 2000 installation is finished and the disk-4 144 contains Windows 2000 operating system. Optionally, BBS 118 may be utilized to make disk-4 144 the primary boot up storage device. Therefore, at boot up, the server [[104]] 106 will go to disk-4 144 to boot from it. An entry pointer associated with the boot up drive may be at device value of 80h in system RAM of the server 106 so that the operation of booting can be accomplished by an INT 13 call. The booting operation can then take place from the entry pointer.

Paragraph begins on page 19, line 14:

Figures 8 through 11 illustrates the methodology of an operating system installation where after initial ~~installation of an operating system~~ setup on a first server on a network, additional servers may boot from the target storage device(s) with the operating system without a further manual installation process. Therefore, by use of the

dynamic host configuration protocol, each subsequent server may find the target storage device with the operating system automatically and boot from the appropriate storage device(s). It should be understood that the flow of Figures 8 through 11 is exemplary in nature and other suitable processes that are consistent with the methodology described herein may be utilized. For example, aspects of the initial installation process of the operating system on the target storage device(s) with respect to the first server as described in Figures 2 through 7 may be utilized.

Paragraph begins on page 22, line 13:

Figure 11 illustrates a flowchart 530 which defines the ~~loads~~ loading of the operating system using DCP from the identified boot devices in accordance with one embodiment of the present invention. In one embodiment, the flowchart 530 starts with operation 540 which investigates a configuration of a system. In one embodiment, the dynamic configuration program (DCP) does not start loading sectors like a boot loader normally would but moves through operations 540 through 550. The DCP, in one embodiment, is initially written to the target storage device during installation of the operating system on the target storage device. It should be appreciated that the DCP may be written during operating system installation in a portion of the master boot record that is typically occupied by the boot loader. It should be appreciated that the DCP may be loaded into any suitable portion of the system memory for running. During operation 540, in one embodiment, the kernel loads DCP into system memory location 0:7E00. In one embodiment, the DCP is generated and configured to have the capability to accomplish operations 540, 542, 546, and 548. It should be understood that the DCP may be configured in a hardware or software form as long as the operations described herein may be run.

Paragraph begins on page 24, line 3:

Using the methodology as described in Figures 8 through 11, by using DCP, after a first server has been set up for boot up from the target storage device where the operating system has been stored, the remaining servers may boot up and load the operating system from the target storage device(s) without a setup process having occurred. This may occur because the kernel may [[be]] use the DCP to determine the configuration of the network and determine whether an operating system has installed and the locations on the target storage device from which bootup may occur. Exemplary embodiments using the methods of Figures 8 through 11 with an iSCSI system are discussed below. iSCSI protocol as generally used is known to those skilled in the art. It should be appreciated that the embodiments described below are exemplary and are specific examples of how the method described herein may be utilized.